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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

METZMAIER, DANIEL S

ART UNIT PAPER NUMBER

1712

DATE MAILED: 04/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/010,075

Applicant(s)

CRANOR, EARL

Examiner

Daniel S. Metzmaier

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claims 6-12 are pending.

Specification

1. The disclosure is objected to because of the following informalities: applicants should check the term "polyenlketone" for spelling or clarify the structure therefore.

Appropriate correction is required.

Claim Objections

2. Claims 6 and 7¹ are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claims 6 and 7 are further rejected since claim 6, which is dependent on claim 10, defines the outer containment polymer is defined as "at least one polymeric material selected from the group consisting of polyglycolic . . . polyenlketone". Claim 10 sets forth the polymeric composition is formed from a water soluble starch/polyolefin combination.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

¹ Claims 6 and 7 are alternatively objected to as not further limiting or rejected as new matter since the original disclosure fails to contain a disclosure of the combination of the polymers "at least one polymer of polyglycolic . . . polyenlketone" with "starch/polyolefin combination".

4. Claims 6-7 and 10-12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 10 defines a "water soluble starch/polyolefin combination" but the original disclosure fails to disclose a water soluble starch/polyolefin combination". While the starch may be water soluble, nowhere does the original disclosure disclose water solubility of the "starch/polyolefin combination".

Claims 6 and 7 are further rejected since claim 6, which is dependent on claim 10, defines the outer containment polymer is defined as "at least one polymeric material selected from the group consisting of polyglycolic . . . polyenlketone". Claim 10 sets forth the polymeric composition is formed from a water soluble starch/polyolefin combination. Applicants do not define a polymer blends of "polyglycolic . . . polyenlketone" with "water soluble starch/polyolefin combination".

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 8-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claimed compositions and articles are indefinite since it is unclear what are the metes and bounds of the claimed; "particularly susceptible to environmental degradation", "disintegratable", "partially biodegradable", and "biodegradable". Applicants set forth definitions at page 10, lines 1-8, of the instant

specification, wherein said definitions are not set forth in the instant claims and said definitions are unclear as to their metes and bounds.

"Disintegrates" is defined as a material which self disintegrates so as to lose its physical form. It is unclear what applicants intend as "self disintegrates", e.g., in a natural environment, in air, in water such as the ocean, in acidic environment, in a basic environment, in an inert environment. At page 8, lines 9-10, applicants set forth that normal plastics degrade very slowly. The examiner sees no distinction between the terms "degrade" and "disintegrates".

"Biodegradable" is defined as a material of whose component parts reenter the food chain within a reasonable period time. It is unclear what applicants intend as a "reasonable amount of time" in claim 8.

"Reentering the food chain" means that the component can be utilized as a raw material (food) by either plants and/or bacteria.

None of said definitions define a timeframe, which said definitions are clearly dependent, e.g., a day, a week, a year, a century, a millenium. It is unclear what the scope of the claims are since no timeframe for "particularly susceptible to environmental degradation", "disintegratable", "partially biodegradable", and "biodegradable"; is set forth.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 6-7 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holland et al and Ladyjensky references as applied to claims 1-5 and 7 above, and further in view of Narayan et al, US 5,869,647, Bloembergen et al, 5,462,983, and Suzuki et al, US 5,409,751. Holland et al (Figures; column 3, lines 8-15; and claims) and Ladyjensky (column 3, lines 3-18; and claims) discloses light sticks employing polyethylene, polyethylene terephthalate (PET) or polyesters.

Holland et al and Ladyjensky references differ from the claims in the use of a particular polymer employed as the containment system for the chemiluminescent compositions, Narayan et al (abstract; column 8, lines 20-61; examples; and claims), Bloembergen et al (abstract; column 7, lines 48 et seq; examples; and claims), and Suzuki et al (column 1, lines 13-15 and 43-52) teach environmentally more friendly polymers that are further transparent including starch/polyolefin combinations, thermoplastic lactic acid based polymers, and blends thereof as a replacement for the conventionally employed polyethylene, polypropylene and PET.

The Ladyjensky reference (column 3, lines 15) discloses the use of polyesters and at least suggest the use of various polyesters known in the packaging arts.

These references are combinable because they teach polymers employed in packaging and replacements therefore. It would have been obvious to one of ordinary skill in the art at the time of applicants' invention to employ the environmentally advantageous and advantageously transparent polylactic acid thermoplastic polymers in making the light sticks of the Holland et al and Ladyjensky references.

Narayan et al (abstract; column 8, lines 20-61) teaches organic and inorganic additives reading on claim 11 additives.

To the extent the references differ from the claims in the specificity of the degree of susceptibility to environmental degradation, disintegratability, and biodegradability disclosed in the references, some variation of said degrees would have been expected based on the different polymers disclosed for use in the Holland et al and Ladyjensky references.

9. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chopdekar et al, 5,597,517. The Chopdekar et al reference (column 4, line 13; examples and claims) discloses a biodegradable chemiluminescent light producing system, which may employ the use of a benzoate ester, i.e., ethyl benzoate.

Claim 8 is directed to a process of selecting a biodegradable chemiluminescent system. No quantitative values for the particular parameters, characteristics, or stability are defined in the claim. The step of "selecting" and "optimizing" has been interpreted as choosing and/or determining to some undefined extent the most appropriate solvent. The Chopdekar et al reference (column 4, lines 1-21; particularly lines 17 et seq) discloses the step of choosing. The Chopdekar et al reference (column 1, lines 5 et seq) clearly teach the desire of obtaining a high intensity chemiluminescent light. It would have been obvious to one of ordinary skill in the art at the time of applicants' invention to select and to optimize as implicit and/or inherent steps in making the Chopdekar et al reference chemiluminescent compositions. Said steps require no more

than routine experimentation of those having ordinary skill in the art at the time of the invention and are well within the ordinary level of skill in the art.

Allowable Subject Matter

10. Claim 9 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter: the particular solvent combination in claim 9 is not disclosed or adequately suggested in the prior art.

Response to Arguments

12. Applicant's arguments filed Jan. 21, 2005 have been fully considered but they are not persuasive.

13. Applicants (pages 6 and 7) assert that the terms biodegradable is a term of art and one having skill in the polymer art would know the scope of the claims. This has not been deemed persuasive since the degree of degradation relative or otherwise has not been defined. Thus, the metes and bounds of the claimed subject matter take on multiple meaning, which is the epitome of indefiniteness.

14. The anticipation rejection over the Holland et al and Ladyjensky references has been withdrawn in view of applicant's amendment of claim 10 defining the polymer as a starch/polyolefin combination.

15. Applicants (page 9) assert the Holland et al and Ladyjensky references employ "normal" polymer outer containers in intimate contact with liquid peroxide or liquid

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oxalate with a frangible inner vials (e.g. glass vials, see also the instant examples, which each use glass vials) and the Suzuki reference teaches containers but does not teach for what said containers may be useful. Applicants further assert Suzuki teaches the materials decompose in sea water within a few weeks. This has not been deemed persuasive since determination of the compatibility of the container with the compositions is within the skill level of one having ordinary skill in the art. The use of the biodegradable polymers for their advantageous biodegradable properties taught would have been obvious to one having ordinary skill in the art at the time of the applicant's invention for said advantageous properties.

16. Applicants (pages 9 and 10) assert there is no motivation to combine the references. This has not been deemed persuasive because the use of biodegradable polymers for their advantageous biodegradable properties taught would have been obvious to one having ordinary skill in the art at the time of the applicant's invention for said advantageous properties.

Applicants assert the Suzuki containers would immediately degrade upon contact with liquid and there is no indication the containers could be made in small sizes used in light sticks. This has not been deemed persuasive for the following reasons. The degradation is a result of hydrolysis, which requires water. The chemiluminescent compositions employ an organic solvent system. The skilled artisan would not expect appreciable degradation until environmental disclosure having adequate moisture. Furthermore, the claims do not define the size of the containers.

17. Applicants assert the Chopdeker et al does not teach or suggest the claimed considerations used to arrive at the compositions. This has not been deemed persuasive since the parameters of biodegradability, solubility, the carboxyphenyl solvents, and optimization are all known and within the ordinary skill level of one in the chemluminescent art. Each of said known parameters would be expected to be considered when formulating a particular composition. Applicants have proffered now unexpected results or unobviousness for evaluating the art known parameters to achieve an art desired result.

Conclusion

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Metzmaier whose telephone number is (571) 272-1089. The examiner can normally be reached on 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Daniel S. Metzmaier
Primary Examiner
Art Unit 1712

DSM